



First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

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DIARY OF FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in the following list:—

Aug. 6-27	French Gliding Competition, near Cherbourg
Sept. 23....	Gordon Bennett Balloon Race, Belgium
Sept. 28....	Schneider Cup Seaplane Race at Cowes
Oct. 4	R.Ae.S. Inaugural Lecture
Oct. 8-13	Light 'Plane and Glider Competitions, Lympe
Oct. 14	Beaumont Cup Race at Istres, France
Oct. 18	"The Manœuvres of Inverted Flight," by Sq.-Leader R. M. Hill, before R.Ae.S.
Nov. 1	"Present Developments in Aircraft Instruments," by Major Wimperis, before R.Ae.S.
Nov. 15	"The Thermodynamics of Aircraft Engines," by Mr. H. R. Ricardo, before R.Ae.S.
Nov. 29	"Airmanship at Sea," by Sqd.-Ldr. Maycock
Dec. 1	Entries close for French Aero Engine Competition
Dec. 13	"Air Strategy," by Wing Cmdr. Edmonds
1924	
Jan. 10	"Materials from the Aeronautical Point of View," by Dr. Aitchison and Mr. North
Jan. 24	"Fabric and Dopes," by Dr. Ramsbottom
Feb. 7	(Subject to be announced later), by a Representative of the University of Tokio
Feb. 21	"Aerial Photography and Survey," by Mr. H. Hamshaw Thomas

EDITORIAL COMMENT.



It appears that there is at present some doubt in certain Air Ministry circles as to whether the offer made in May of this year to purchase, for the sum of £3,000, the British machine which won the Aerial Derby, applies to the Gloucestershire Aircraft Company's "Gloster" on which Larry Carter won the Derby. It is possible that if it were argued by the most learned K.C.'s who adorn the Bar a case might be made out for regarding the "Gloster" as a development of "Mars I." But it does seem to us that there is very good reason for adopting the opposite view, and to regard the "Gloster" as a new machine.

In the first place, the wings with which the "Gloster" is fitted are quite different from those of "Mars I," not only in area but also in section. Secondly, the arrangement of the petrol tank has been entirely changed, so that, instead of it being mounted above the fuselage, between the top centre-section struts, it is housed inside the fuselage. Now it is conceivable, and even probable, that these alterations have considerably changed the flow of air around the wings and fuselage, while the "fin area" must also have undergone considerable modification. Consequently experimental features were introduced which, as the result of the race indicated, increased the speed of the machine without detrimental results in other directions.

What we would plead is that the Air Ministry should take a broad-minded view of the matter, and allow itself to be guided by the spirit of the £3,000 offer rather than by what might be claimed as the legal letter of the offer. After all, presumably the object of the offer was to encourage the production by British constructors of really fast aircraft, and this it can scarcely be denied that the Gloucestershire Aircraft Company has done. As we have previously pointed out, the building of such fast machines costs a very great deal of money, and the prizes offered in a race like the Aerial Derby are not, unfortunately, of a magnitude to compensate to any appreciable extent even the builders of the winning

machine. If, in spite of this fact, private constructors spend money which can ill be spared at the present moment on such very practical full-scale research—for that is what it amounts to—it is to be assumed that the knowledge gained will benefit other types produced by these firms (and, incidentally, others who make themselves wise), with consequent gain to the Royal Air Force.

Thus a very good case can be made out for regarding the "Gloster" as a new type, and we sincerely trust that the Air Ministry will emulate the very sporting spirit which the Gloucestershire Aircraft Company has always shown, and purchase the "Gloster" for the amount offered some months ago. Incidentally, would it not be common sense to buy the machine complete with engine? A specially-tuned Napier "Lion" has been installed, and it would seem a sheer waste of money to take this engine out and replace it with another later on so as to give the official testers of the Air Ministry an opportunity of becoming familiar with the handling of a really fast modern racer.

While it might be thought that we are attaching too great importance to this case, we would point out that not only the Derby winner is involved, but also one of the Schneider Cup defenders. If a decision is given against purchasing the "Gloster," then there will be very grave doubt as to whether the Supermarine "Sea Lion" is eligible, should it succeed in winning this year's Schneider Cup Race at Cowes. Thus one of our three Cup Defenders would be at a serious financial disadvantage, and in view of the governmental assistance given to the foreign competitors, this would be disastrously unfair. We have, however, sufficient faith in the fair-mindedness and sporting spirit of the Air Ministry to believe that it will decide—for this year, at any rate—to regard both the "Gloster" and the "Sea Lion" as new types "for the purpose of the act."

The "Motor- Glider" Competition

Under the Royal Aero Club Official Notices on p. 507 of this week's issue of FLIGHT will be found the rules and regulations governing the forthcoming competitions for light 'planes—or, as the official term still is, "motor-gliders"—to be held at Lympne, Kent, from October 8 to October 13, 1923. Most of the rules have already been foreshadowed in FLIGHT, but certain additional prizes have resulted in some small amount of variety being introduced into the competitions. The economy competitions remain the same for the Sutherland and *Daily Mail* prizes, with the exception that the former and original prize is reserved for British machines and pilots, while the latter is International, subject to this term meaning members of the F.A.I., which automatically rules out German entries. The Abdulla prize is offered for speed, but it is not definitely stated whether competitors will be allowed to try for this prize at any time during the competition, or whether a certain day and time will be set aside for the speed competition. Incidentally it would be a good idea to incorporate with the speed race a handicap race. Otherwise there seems to be a danger that but few entries will be forthcoming for the Abdulla competitions, as most of the machines will probably have been designed mainly for the economy competitions for which the largest prizes are offered.

The prizes offered by the Society of Motor Manu-

facturers and Traders and by the British Cycle and Motor-Cycle Manufacturers and Traders Union are to be awarded for the greatest number of completed circuits flown during the week over a course of approximately 30 miles. Thus there should be encouragement for competitors to be "up and at it" with every favourable opportunity, which again should result in plenty of flying throughout the week. We are still far short of the variety of tests suggested by FLIGHT when the prizes were first announced, but possibly the present regulations form a fairly good compromise between what is desirable and what is practicable.

And that Air Worthiness Certificate

Now that the October competitions are drawing near, and at least two of the machines built for it have been tested in flight, is it not time we had an announcement from the Air Ministry concerning the position of these machines in relation to airworthiness certificates, load factors, identification marks and such-like? It is now many months since FLIGHT first called attention to the absurdity of charging £65 for an airworthiness certificate for a type of machine which will have to be built as cheaply as possible, and still, apparently, the Air Ministry is thinking about it. This is scarcely fair to potential competitors, who may find—when it is too late and the machine has been built—that they have worked to load factors which do not conform to the official demands imposed.

Personally, we think that, for the purpose of the competitions at any rate, the Air Ministry ought to waive the rules governing the flying and inspection of civilian aircraft, trusting to the good sense of constructors and pilots not to produce or fly machines that are dangerous by reason of structural weaknesses. Later on, when the competitions have—let us hope—furnished data upon which to base the design of light 'planes for the use of the general public, the whole question will have to be thoroughly thrashed out, and a way found to ensure that all machines sold to the general public are structurally sound, while, at the same time, there should be as little red tape and Government interference as possible in the matter of the use of the machines. May we have a decision, please, and may we have it at once?

A Distance Prize

In our Light 'Plane and Glider Notes this week we give a brief outline of the rules governing the competition for the prize of 10,000 francs offered by the French journal *L'Aero-Sports*. The prize is International, and is offered for the greatest distance in non-stop flight covered by a machine whose engine capacity does not exceed 1,500 c.c. A minimum distance of 500 km. (310 miles) must be covered to qualify. By way of showing what this distance means, it may be pointed out that a circle of 500 km. radius with le Bourget as a centre, will touch, approximately, the following towns: Exeter, Leicester, Cromer, in England, Helder and Zwolle in Holland, Munster, Frankfurt, Darmstadt and Stuttgart in Germany, Berne in Switzerland, and Valence and Bordeaux in the south of France. Competitors will probably choose a direction that will give a following wind so as to increase their distance as much as possible.

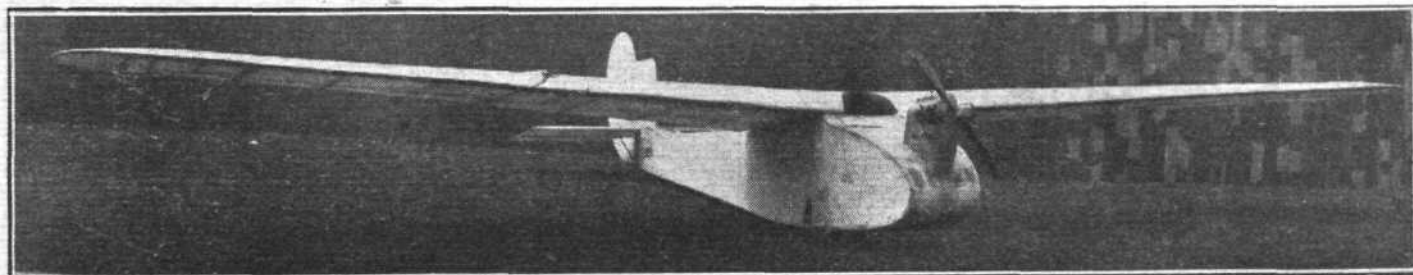
THE "WREN" LIGHT 'PLANE

In our issue for April 12 last we published a photograph of, and made brief reference to, the remarkable little light 'plane built to the designs of Mr. W. O. Manning by the English Electric Company, Ltd., of Preston, and known as the "Wren." Since that time the "Wren" has made numerous successful flights, and has been taken over by the Air Ministry, for whom it was built. This first experimental machine having more than fulfilled its designer's expectations, and

opposing winds, and is sufficient for a quick get-off from a reasonably level field.

The "Wren" is very easy to fly, and handles remarkably well in the air. Various pilots who have flown it have reported very favourably indeed on its performance. It has an excellent gliding angle, thus enabling full advantage to be taken of favourable winds.

Particular attention is called to the arrangement of the



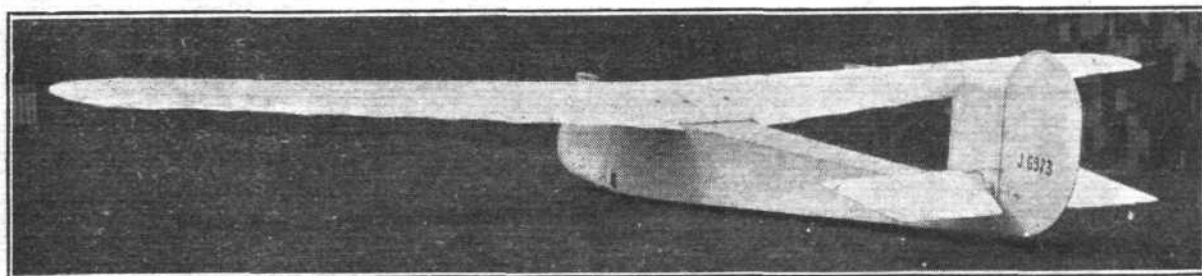
THE "WREN" LIGHT 'PLANE, FITTED WITH 3 H.P. A.B.C. ENGINE : Three-quarter front view.

demonstrated its practicability, it has been decided to put the "Wren" into production, and offer it to the public as a really low-powered light 'plane, easy to fly and cheap to maintain, at the low price of £350.

We therefore give this week further details of the "Wren," together with illustrations and general arrangement drawings.

The production model now offered is practically identical with the original machine, the only alterations being of a minor

landing wheels, which eliminates the usual type of projecting undercarriage. This not only reduces head resistance, by enabling the wheels to be partially enclosed in the fuselage, but enables the machine to be landed on rough ground, ploughed fields, or gorse bushes, etc., without any risk of turning over, which would be almost inevitable with the usual type of landing gear. The fuselage bottom is reinforced with a three-ply rubbing surface over a large area forward, and in



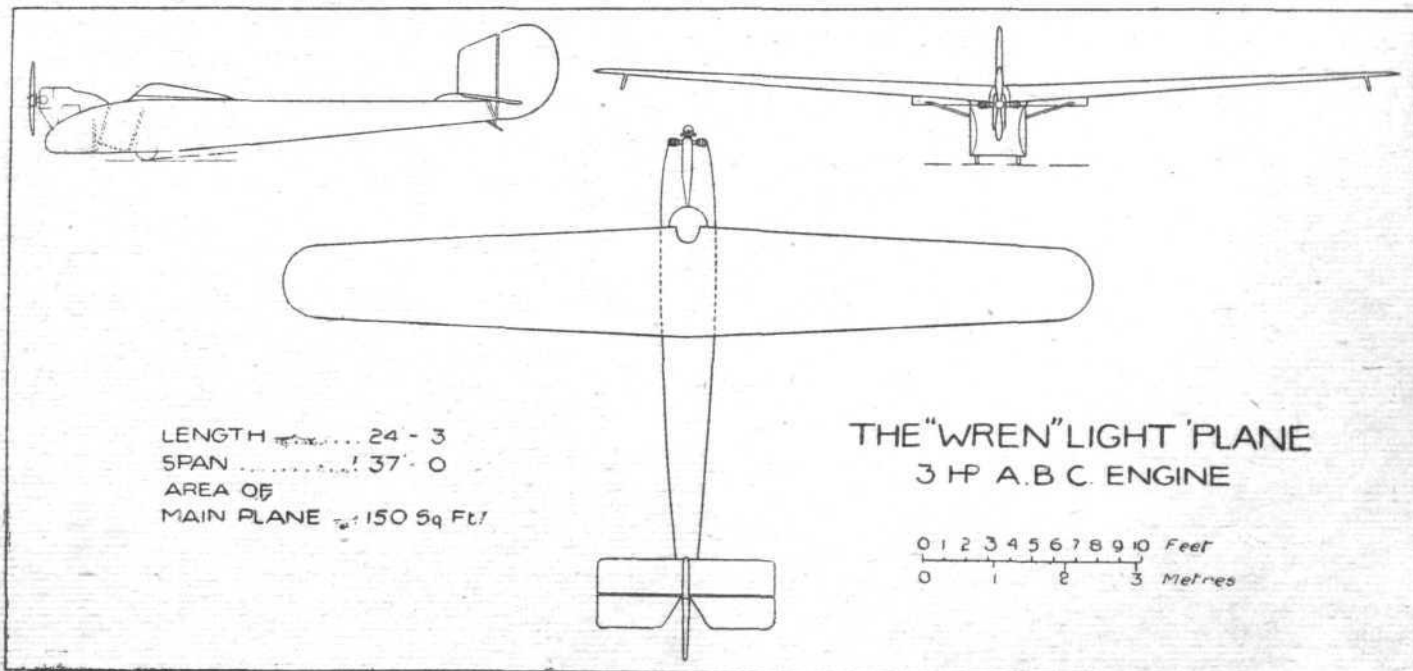
The "Wren" Light 'Plane : Three-quarter rear view.

nature in the detail construction, tending to improve durability and to facilitate the quick attachment and detachment of the main planes, etc.

All parts have been designed and passed to the standard safety factors of the Air Ministry. The power available is quite adequate for cross-country flying except in very strong

the event of a forced landing on bad ground this acts as a braking surface. This, together with the low landing speed (25 m.p.h.), enables the machine to be brought to a standstill in a few yards.

Another noteworthy feature is the fact that its 3 h.p. A.B.C. engine is run at a comparatively low speed, thus



THE "WREN" LIGHT 'PLANE : General arrangement drawings, to scale.

ensuring reliability and durability. In motor-cycle racing this type of engine is frequently run at 4,000 to 4,500 revolutions per minute, whereas in this machine its maximum speed is only about 2,700 r.p.m., equivalent to a speed of just over 35 m.p.h. on the motor-cycle. When once the machine is in the air the engine can be throttled down to half power, which is ample to sustain level flight. It will thus be seen that the engine is not required to run under any more arduous conditions than usual, while the cooling is naturally much more efficient.

The "Wren" should especially appeal to those in out-of-the-way parts of the Dominions and Colonies, who have thus placed within their reach the means of travelling over wide stretches of country with inferior roads, or even no roads at all, at a speed equal to an express train, and at a practically negligible cost.

It should be noted that the "Wren" is in every way suitable and eligible for the forthcoming light aeroplane competitions for the Duke of Sutherland's £500 and *Daily Mail* £1,000 prizes, etc.

The fuselage of the "Wren" is of orthodox box girder construction, reinforced at points of attachment of main planes, landing wheels, etc. The tubular axle of the landing gear is fitted with two pneumatic-tyred wheels and is attached to the lower longerons of the fuselage with shock-absorber cord. A swiveling tail skid sprung with shock-absorber cord is fitted.

The main planes are of the cantilever type, thus eliminating outside struts and bracing wires. A special high-lift section is used. The main spars, of substantial box section, are of spruce, and a special form of internal bracing is used, giving great torsional stiffness. Quick detachable joints are provided between the two planes and to the fuselage. The leading edge is covered with three-ply on the upper surface.

A special light fabric is used for the covering, doped with Titanine "glider dope," finished in aluminium colour.

Tail plane, elevator, fin and rudder are of substantial build, and follow standard constructional methods. The controls follow approved standard practice, and are exceptionally efficient in operation.

The engine is a 3 h.p., O.H.V., 398 c.c. flat twin A.B.C., motor-cycle type, specially adapted for aircraft work. It is mounted on the top of the nose of the fuselage, and drives direct a two-bladed tractor screw made from four laminations

of selected Honduras mahogany. This airscrew looks an almost ridiculously small affair, measuring as it does only some 3 ft. 6 ins. in diameter, but it has been found in practice to be quite efficient.

The pilot sits in the nose of the fuselage immediately behind the engine, and with his head level with the leading edge of the main plane, a portion of the latter being cut away to house the "brain" of the machine. From this position the pilot obtains an excellent view in all directions, it being quite easy to look past the engine and its mounting, which is very narrow, while the downward slope of the front portion of the deck enables him to look over the nose. For landing the machine should be as nearly "fool proof" as makes no difference, as the pilot can see the ground quite clearly, while the low position of the nose of the machine effectively prevents overturning on landing.

The controls are of usual type, with a "joy-stick" for elevator and ailerons and a foot-bar for the rudder. As distinct from the experience of many of the competitors at Itford last year, the "Wren" has been found to answer her controls well, both under power and when gliding with the engine throttled right down. Manœuvres such as vertical banks have already been executed on the machine, and it seems quite probable that the "Wren" would loop, although considerable caution should be used in stunting such a machine. Owing to the low resistance a very high speed can probably be attained in a dive, and a too sudden flattening out might consequently impose very severe stresses on the structure.

It may be mentioned incidentally that two "Wrens" will be entered for the forthcoming competitions at Lympne, one of which will be piloted by Squadron-Leader Maurice Wright, who put the first "Wren" through its tests, and the second by Flight-Lieut. Longton, whose flying in recent races and exhibitions at the Pageant have made him known to and popular among wide circles of aviation enthusiasts.

Following are the main characteristics of the "Wren": Length, o.a., 24 ft. 3 ins.; span, 37 ft.; weight of machine empty, 232 lbs.; engine, 3 h.p., 398 c.c., A.B.C. flat twin; fuel capacity, 1 gallon of petrol and 1 pint of oil; duration, 1½ hours; instruments fitted, Smith's air speed indicator and cross level; revolution counter and altimeter can be fitted if desired. The maximum speed is 50 m.p.h., and the landing speed about 25 m.p.h. The machine can be stored in a shed 24 ft. 6 ins. long, 8 ft. 6 ins. wide, and 5 ft. 6 ins. high.

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LIGHT 'PLANE AND GLIDER NOTES

Those wishing to get in touch with others interested in matters relating to gliding and the construction of gliders are invited to write to the Editor of FLIGHT, who will be pleased to publish such communications on this page, in order to bring together those who would like to co-operate, either in forming gliding clubs or in private collaboration.

In referring to the British light 'planes now being constructed for the forthcoming competitions for the Sutherland, *Daily Mail*, Abdulla, and other prizes, totalling more than £2,000, we omitted to mention, last week, the two machines being built by Handley Page to the designs of Captain W. H. Sayers. Reference has, however, been made to these machines in previous issues of FLIGHT, and it may be recalled that they will be generally similar to the glider designed for the Itford meeting last year by Capt. Sayers. They will, however, have certain novel features other than those necessitated by the fact that engines are fitted. Thus slotted ailerons will be tried, and on one of them front slots as well.

* * *

WE are extremely sorry to learn that our old friend Capt. F. Warren Merriam has been obliged to close down his glider establishment and the Whiteley Bank School of Gliding in the Isle of Wight. Capt. Merriam has not given up without a struggle, but his nerves and general health have not been up to the strain, and he has consequently been obliged to close down.

* * *

KNOWING how very keen Merriam was—and is—we can appreciate what this means to him, and we hope that after a few months' rest his health will improve so that he may resume the work he loves so well.

* * *

IN the meantime, Merriam is disposing of his glider, so that here should be an opportunity for anyone wishing to get immediate delivery of a machine. The monoplane can, if desired, be fitted with a cycle engine, so that it should be

possible for anyone interested to get a power-driven light 'plane at relatively low cost, suitable for the forthcoming competitions at Lympne in October. Communications should be addressed to Capt. F. Warren Merriam, Whiteley Bank School of Gliding, Wroxall, Isle of Wight.

* * *

THE first of the small monoplane light 'planes built by the Air Navigation and Engineering Company, Ltd., of Addlestone, Surrey, to the designs of Mr. Shackleton, was tested on Tuesday of this week (August 21). The machine, which was fully described and illustrated in FLIGHT of March 29, 1923, was flown by "Jimmy" James at Brooklands. Although the "feel" of the machine is slightly different from that of the "Bamel," Jimmy soon felt at home on it. He remained up for approximately a quarter of an hour, and reached an altitude of about 1,000 ft., which is not bad for a first flight.

* * *

ACCORDING to the speed indicator fitted, the A.N.E.C. light 'plane does 75 m.p.h., and, although the instruments have not been checked yet, this is probably somewhere very close to the actual speed, probably a bit under. Various minor adjustments have to be made, but in the main the machine is quite all right.

* * *

THE Blackburne engine is mounted rather differently from usual practice, in that it has its cylinders pointing downwards. It might have been thought that this position might lead to sooted plugs, but tests in the shop, with oil being pumped into the engine at a far higher rate than would obtain in actual flying, revealed not the slightest tendency to soot the plugs, nor did the 15 minutes' flight by James on Tuesday.

* * *

THE machine has no fixed tail plane, and the elevator is balanced. Consequently, one would expect it to be fairly sensitive, and this proved to be the case, although not to excess. James prefers a machine to be sensitive, as in the

case of flying near the stalling angle the pilot has ample control to prevent a sudden stall. The ailerons fitted seem somewhat small, but on his test flight James found them to be very effective, the machine answering her lateral controls admirably, although being fairly stable. A second machine of the same type is now nearing completion.

AFTER considerable delay the rules and regulations governing the competition for the prize of 10,000 francs offered by our French contemporary *L'Aero-Sports* have been published. This competition is for light 'planes with an engine not exceeding 1,500 c.c. capacity, and is open to all countries except those which were at war with France during the period 1914-18. The competition is for distance covered in a straight line without landing, and there is no limit imposed on the amount of petrol that may be carried.

To prevent competitors from overloading their machines with petrol so as to obtain maximum range, the regulations stipulate that the machines must reach a certain minimum altitude during the first half-hour's flight. This altitude is to be ascertained as follows: Before the start the barograph pen is placed upon the 760 mm. mark, and at the end of the first half-hour's flight the pen must touch the 670 mm. mark at least. A minimum distance of 500 km. (310 miles) must be covered in non-stop flight in order to count.

THE start may take place on any date between June 15 and October 15, 1923. (The former date was chosen when the prize was first proposed, the delay being due to controversies concerning the regulations.) The point of departure must be the air port of le Bourget, but competitors may fly in any direction they wish, thus taking advantage of the direction of the wind on the day of the attempt.

AN entrance fee of 100 francs is demanded, and should be sent to the proprietors of *L'Aero-Sports*, 14, Place Clichy, Paris, the day before it is intended to make an attempt. The entrance fee of 100 francs will be refunded to any competitor who actually makes a start in the competition.

THE attempts will be officially controlled, and the point of landing must be indicated on a large-scale map. The pilot's log book and a special landing certificate (which latter can be obtained from the Commission d'Aviation de l'Aero-Club de France, 35, Rue François Ier, Paris) must be signed by an official.

THE engine capacity must be certified by the Laboratoire des Arts-et-Metiers, 292, Rue Saint-Martin, Paris, a charge of 100 francs being made for the examination and verification of the engine. All expenses in connection with the control and verification must be borne by the competitor.

THE VAUVILLE LIGHT 'PLANE AND GLIDER MEETING

No Remarkable Performances Yet

UP to the present it would appear that weather conditions and other obstacles have been against the organisers of the Second Experimental Gliding Congress, which is being held at Vauville, near Cherbourg. The Congress closes on Sunday next (August 26), and unless conditions improve between now and then it seems likely that nothing much will have been accomplished. It should be remembered, in attempting to assess the value of this Congress, that it is in no way an ordinary meeting, much less an ordinary competition. The Congress was established with experimental work in view, and the prizes offered are more by way of being intended to reimburse competitors for their expenses in connection with the experiments. It had been hoped that horizontal, motor-less flights would be accomplished—in other words, what is sometimes referred to as "gust-soaring." So far, however, it does not appear that any of the experimenters have even attempted this form of soaring. In fact, from the brief newspaper paragraphs referring to the Congress it is not always clear whether certain performances have been established with gliders or with light 'planes.

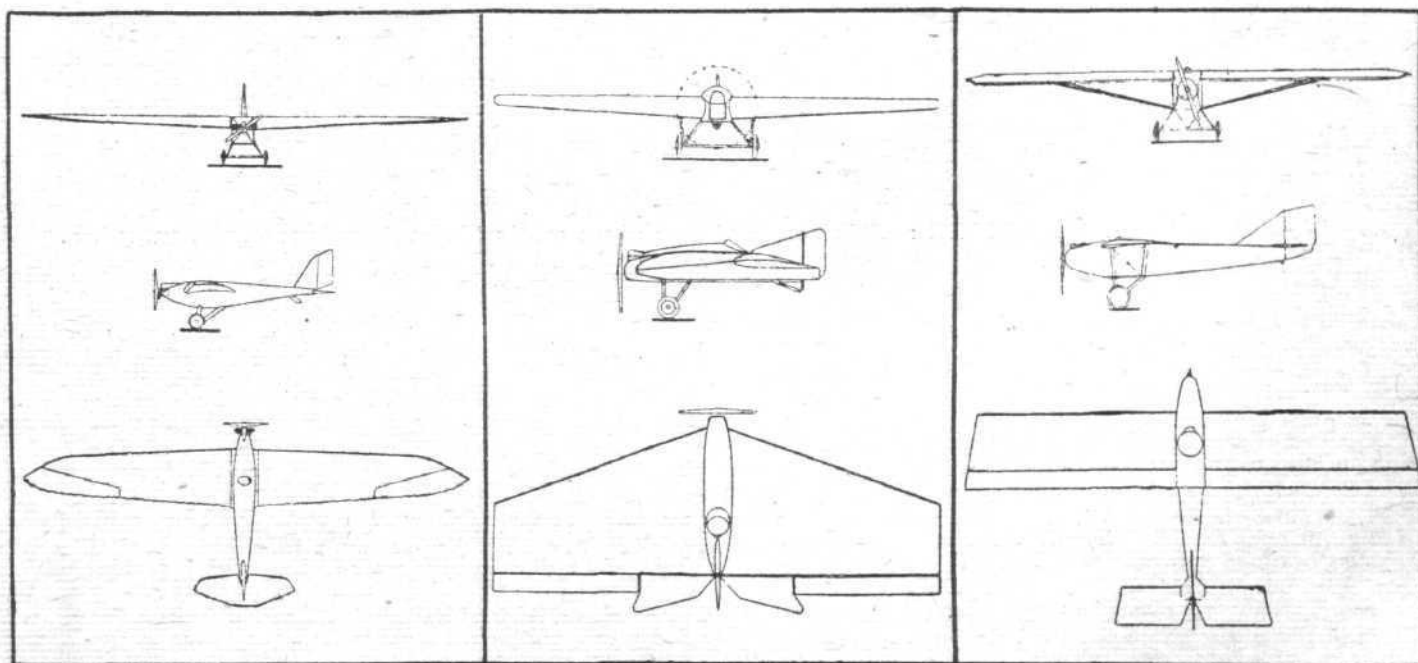
So far as can be gathered, out of the 56 machines entered

only comparatively few have put in an appearance. Last week we gave in tabular form a list of all the entrants, with brief particulars of the machines. The division between pure gliders and light 'planes was fairly even, there being 29 of the former and 24 of the latter. The remaining three were "aviettes," or man-propelled machines.

From a correspondent who visited Vauville last week we have received some notes dealing with the camp and with certain of the more interesting machines. From these notes we quote the following paragraphs:—

"The Second Experimental Gliding Congress is being held at the Camp Mouillard, which is situated almost 20 kilometres from the town of Cherbourg, from which it can be reached by motor-bus. The camp consists of about 18 hangars, each of which can take one machine of ordinary size or two smaller ones. The camp is well fitted up, and possesses its own electric light plant, driven by petrol engines. There is an excellent meteorological outfit, and the camp is also well equipped with post office, telegraphic instruments, press rooms, fire appliances, ambulances, etc.

"The camp is situated on the top of a ridge overlooking the



Courtesy of "Les Ailes."

THREE LIGHT 'PLANES FROM VAUVILLE: On the left, a power-driven Dewoitine. Centre, the tailless "Simplex." On the right, Maneyrol's Peyret monoplane.

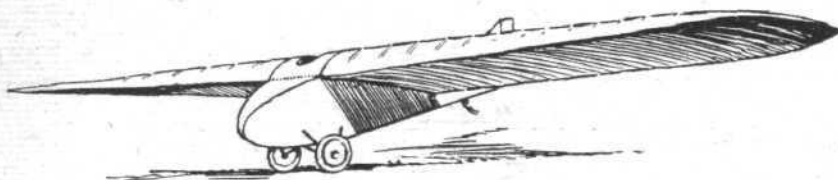
sea. This ridge is possibly 800 ft. high, and the bottom of the ridge is perhaps a mile from the sea. It faces west, and I understand that suitable hills exist for winds varying 45 degrees from this angle. The officials connected with the Congress have treated me with very great courtesy, and went to very considerable trouble to conduct me around the camp and to introduce me to all the competitors.

"The service of charabancs from Cherbourg to the camp is very poor, and seems to start at very irregular times. Any enquiry as to when the vehicle is going to start is replied to with 'tout de suite,' which apparently possesses here a different meaning from that given in the dictionary, as nothing happens for a long time afterwards."

Turning to the subject of the machines themselves, our correspondent continues: "Among the gliders the new Dewoitine two-seater is undoubtedly the best. It is a very 'clean' machine, and is similar to the glider which competed at Itford last year, inasmuch as it possesses flexible wings

gliders, but it is not clear what they purpose to use it for. However, the only possible criticism is that such a control may be redundant, and the fact that it is fitted cannot detract from the excellent performance and good gliding angle which one has no doubt the Thomas monoplane possesses. The dimensions given of this machine are as follows: Weight with pilot, 160 kgs. (350 lbs.); area, 21 sq. m. (226 sq. ft.); weight empty, 90 kgs. (200 lbs.); weight of wings, 45 kgs. (100 lbs.)."

Concerning the two Dewoitine power-driven machines our correspondent says: "There are at present two Dewoitine light planes here, one with a Vaslin engine and one with a Salmson. The Vaslin is a four-cylinder horizontal engine. It looks rather heavy, and has a common head to the two cylinders on each side. It has overhead valves, and is otherwise normal as far as can be seen. The Salmson is a three-cylinder Y-type, and is quite a pretty job. It is probably lighter than the Vaslin, and both engines apparently give about 15 h.p. at the speed at which they are run. Both



THE DEWOITINE TWO-SEATER GLIDER: A "thumbnail" sketch from Vauville. On the right is shown diagrammatically the way in which the camber and incidence of the wing are altered.

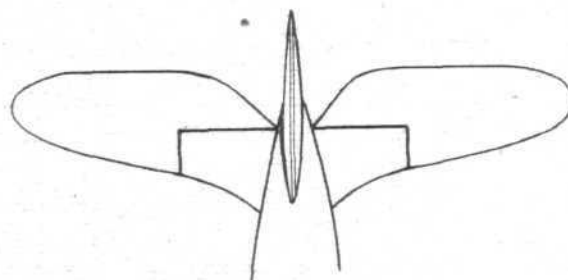
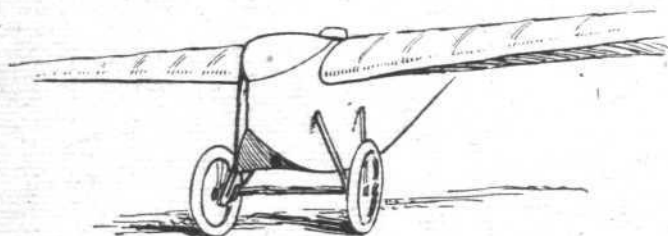
carried out in the same manner. The wings are entirely cantilever, and are fixed practically on the top of the fuselage, instead of growing out of the sides, as in the power-driven machine.

"The wings are fitted with a species of variable camber gear, which consists practically of very large ailerons carried along the whole wing. These ailerons can be worked together either up or down when it is desired to vary the camber, or differentially for lateral control. The gear is not dissimilar to the Fairey gear, and the accompanying sketch gives the approximate wing arrangement. The leading edge contains a bell crank arrangement for operating the ailerons and also the wing spars. The machine possesses an ordinary type of chassis with rubber shock-absorbers. The tail plane is of Morane type, and the rudder and fin are on ordinary Dewoitine lines.

"The fuselage is also on usual Dewoitine lines, and the whole machine is very well made and reflects the greatest

engines start up easily, and seem to run very smoothly. On Sunday afternoon Descamps brought out the Vaslin-Dewoitine, and made a very pretty flight of some 15 minutes. On landing, however, for some reason the machine swerved and charged a shed, slightly damaging a wing. Barbot then took out the Salmson-Dewoitine, and made a couple of circuits."

It is very regrettable that the Congress should have been marred by a fatal accident, and it is rather curious that the accident should have happened to a machine about which our correspondent speaks rather well. As our readers know, the accident which cost young Hemmerdinger's life was caused by the right wing of the Thomas monoplane glider breaking in the air, when the machine was at a height of about 100 ft. The actual cause of the breakage has not yet been officially stated, but to us it seems likely that the explanation may be that, on landing after some previous flight, the wing may have been damaged without the knowledge of the pilot, and that a



THE ILL-FATED THOMAS GLIDER: This rough sketch gives a fair idea of the lines of the machine. On the right, a plan view of the tail.

credit on the designer and constructor. It is stated that the machine has been designed for gust soaring, but whether it will be successful in this direction remains to be seen. So far as is known, however, the machine has not yet flown.

"The next most promising machine is the Thomas, which is the work of a young engineer, who has spent all his spare time during the last six months in designing and constructing it. It seems to be very well made, and the fuselage, which is three-ply covered throughout, has been made water-tight, so as to permit the machine to float if it lands on the sea. The machine, of which a rough front view sketch is shown herewith, has no dihedral on the top of the wing. The pilot sits between the spars. The tail plane looks in plan view somewhat as shown in the accompanying sketch.

"In addition to the ordinary controls, the machine possesses a lever for the purpose of varying the incidence at which the wing is fixed to the body. This type of control is becoming very popular with those who design and make

sudden stress imposed by a gust may have caused the damaged wing to fail during the fatal flight. We can only express our sympathy with our French friends, and particularly with poor Hemmerdinger's relatives, who witnessed the sad accident.

For the rest, no noteworthy performances have been put up during the Congress, at least not until we close down for press. In the main it seems to have been a race between Maneyrol and Simonet, but although the newspaper reports give the impression that the durations established refer to pure gliders, it seems more likely that they should be considered to have been put up on light planes.

At the moment of going to press the greatest altitude attained stands to the credit of Maneyrol on the Peyret, who has got up to 9,400 ft., with Barbot on the Dewoitine second with 8,300 ft. On Monday, August 20, Maneyrol is reported to have remained up for 2 hours 40 minutes, in spite of a thick fog. Undoubtedly this report refers to a flight on a pure glider.

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

MOTOR-GLIDER COMPETITIONS

AT LYPNE AERODROME, NEAR HYTHE, KENT
OCTOBER 8-13, 1923

"Daily Mail," £1,000.—To be awarded for the longest distance in one flight, providing such flight is not less than 50 miles. *This prize is open to the World.*

Duke of Sutherland, £500.—To be awarded for the longest distance in one flight, providing such flight is not less than 50 miles. Competitors must be British subjects, and the machine and engine must have been entirely constructed in the British Empire.

Regulations

The Regulations contain, *inter alia* :—

Motor-Glider.—The competition is open to any heavier-than-air machine with engine, the total cylinder capacity of which must not exceed 750 c.c. Any additional motive power produced by the personal exertions of the occupants during flight is allowed. The machine must not be supported either wholly or in part by any gas which is lighter than air.

Competitors may use any launching device provided by themselves.

Fuel Allowance.—One gallon only will be allowed. The fuel is to be such as can be commercially obtained in bulk.

Pilot.—The weight of the pilot must be made up to a minimum of 168 lbs.

Transport.—Competitors must demonstrate to the Officials that the machine is capable of being transported on the ground a distance of one mile by not more than two persons without the use of any extraneous tackle, within a period not exceeding three hours. The selected course for this test will include the getting out of a field through an ordinary gateway, 10 ft. wide, and proceeding along a 15-ft. road, occupying

not more than half the width of the road. This test must be satisfactorily passed before any distance flight in the competition is made.

Accommodation.—Competing machines will be housed free of charge at Lypne Aerodrome.

Abdulla and Co., Ltd., £500.—To be awarded for the fastest time over a course of approximately 30 miles. For this prize the fuel allowance will not be limited. The prize will be open to all competitors making an attempt for the prizes offered by the Duke of Sutherland and the *Daily Mail*.

The Society of Motor Manufacturers and Traders, £150. The British Cycle and Motor Cycle Manufacturers and Traders Union, Ltd., £150.—To be awarded for the largest number of completed circuits flown over a course of approximately 30 miles. The same machine and engine must be used throughout. Competitors must be British subjects, and the machine and engine must have been entirely constructed in the British Empire. A minimum of 400 miles must be flown during the period of the competitions to qualify for these prizes.

Entries.—One entry only is required for these Competitions. The entry fee is £5. This fee, together with the entry form, must be received by the Royal Aero Club, 3, Clifford Street, London, W. 1, not less than seven days prior to the date fixed for the start of the Competition.

The closing date of entries is Monday, October 1, 1923.

Regulations and entry forms can be obtained from the Royal Aero Club, 3, Clifford Street, London, W. 1.

Offices: THE ROYAL AERO CLUB,
3, CLIFFORD STREET, LONDON, W. 1.

H. E. PERRIN, Secretary.

LONDON TERMINAL AERODROME

Monday evening, August 20, 1923

HANDLEY PAGE TRANSPORT have during the week inaugurated their service to Zurich. One of their O.400s, G-E.A.T.H., which has been reconstructed at Cricklewood, left for Zurich on Thursday, and, after stops at Paris and Basle, arrived at Dubendorf Aerodrome, Zurich, at 5.40 p.m. Mr. MacIntosh was pilot, and Generals Brancker and Festing travelled as passengers. Mr. Cogni has been at Zurich for the past few days making arrangements at that end. It is proposed that this O.400 should run between Paris and Zurich, connecting with the Handley Page Service between London and Paris. It will run from Paris to Zurich on Monday, Wednesday, and Friday, and from Zurich to Paris on Tuesday, Thursday, and Saturday.

Improvements at the 'Drome

CONSIDERABLE work is now being done in the enlarging of the aerodrome. On the south side, past the aerodrome buildings, a large tract of land, which was over-run with trees and a tangle of undergrowth, has been cleared, and the tree-roots have been blown up with dynamite, reminding the inhabitants of the aerodrome of the war days near the battle-front. This has enabled another large piece of land, which has up to the present been given up to cultivation, to be brought into the alighting area, and provides a much longer run from north to south. As this run is uphill and generally into the prevailing wind, this should be of great assistance to heavily-laden machines which, on occasion, have only just managed to clear this mass of undergrowth. Now that the corn on the site of the old Beddington aerodrome has been harvested, R.A.F. surveyors are busy plotting out this land, which is to be taken over to still farther extend the aerodrome. When this is completed the London air-station should be one of the finest in the world.

I understand that there is a big scheme on hand for the consolidation of the aerodrome buildings, which will wipe away all the small superfluous huts which straggle round the main buildings. The scheme of reconstruction includes the building of several new sheds and central aerodrome offices. Eventually it is hoped that the buildings will be in the centre of a huge aerodrome, enabling machines to take off from and land towards the sheds and offices, no matter what the direction of the wind.

Some unusual cargoes have been carried on the various air expresses during the past week. The Air Union brought over a 30-ft. birch-bark canoe, gaily painted in Indian fashion, from Paris in one of their Goliaths, which has a door in the nose of the machine, and it ran the full length of the machine itself, the bow sticking out of the forward door. Another unusual consignment was sent by the Instone Air Line from London to Cologne, consisting of a wooden box about 2 ft. square, which was described on the consignment notes as containing cremated human remains.

Incidentally the Instone Air Line have now contracts which will keep the converted "Vimy" flying every day with full loads for a period of at least six months.

Increase of Traffic on London-Manchester Route

DURING the holiday season there has been quite an increase in the number of passengers flying between London and Manchester. Whether these air travellers are holiday-makers, or business men in a hurry, it is difficult to ascertain, but it is significant that this increase in passenger traffic should have occurred in the holiday season. Quite a number of these passengers between London and Manchester travel down from Manchester in the morning and return by the evening machine, while several Manchester business men have taken advantage of this service in order to fly right through from Berlin to Manchester in a single day. The traffic on the Berlin Airway shows no signs of slackening off, and I understand that the Daimler Airway are endeavouring to make arrangements to run another machine each way weekly between London and Berlin, bringing the total number up to three per week in each direction.

Owing to the steady increase in their freight and passenger traffic, the Instone Air Line have, during the past week, engaged two more pilots, and these two spent Sunday in making the necessary flights in the Vickers "Vimy" in order to qualify to have this machine placed on their licence.

The Surrey Flying Services have been very busy over the week-end with joy-riders, and I understand that their seaside ventures are all going so well that it is difficult for them to provide enough machines and pilots to carry all who wish to take their "baptism of the air." On Sunday the Surrey Flying Services D.H.9 was employed by the Instone Air Line for a special trip to Cologne.



GOTHENBURG

International AERO EXHIBITION

1923



BY THE TECHNICAL EDITOR

(Concluded from p. 495.)

Czechoslovakia

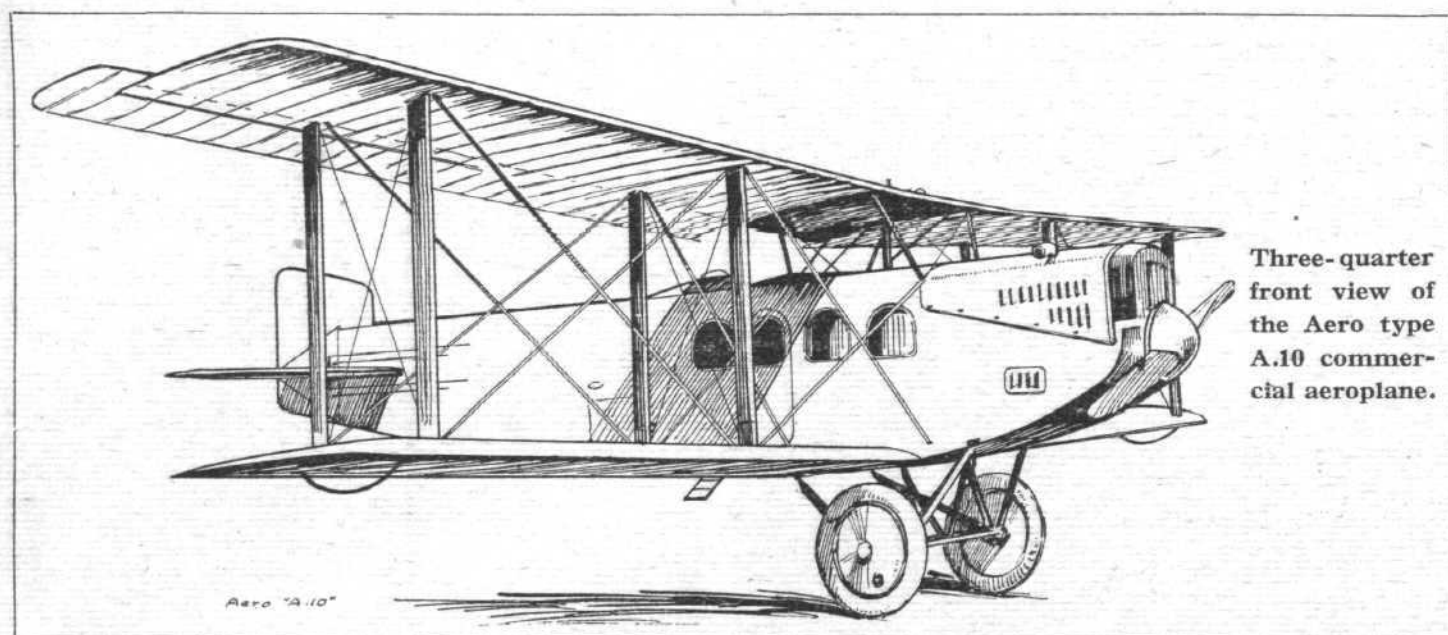
THE Czechoslovak Republic was well represented at Gothenburg, especially taking into consideration that the firms exhibiting have been in existence for a comparatively few years only. Incidentally, it is of interest to note that the only machines at the Show which had been flown there were the Czechoslovak biplanes.

Aero Tovarna Letadel, Prague.—This firm, of which Inz. A. Husnik is chief designer, exhibited two machines. One of these, the commercial A.10, is a cabin biplane, with 260 h.p. Maybach engine, and has seating accommodation for five passengers in the cabin and another in an open cockpit behind the pilot. The machine was described in detail in *FLIGHT* of June 15, 1922, and it is not, therefore, necessary to refer to its constructional features here. The machines are being used extensively on the Prague-Bratislava line, and among notable flights carried out by this type mention may be made of the flight from Prague to Mostar, Yugoslavia. The machine exhibited at Gothenburg was flown over in one day, the total flying time being 7½ hours. It is of interest to mention, by way of an instance of the very lively interest taken by Czech public men in aviation, that the Minister for National Defence, Frank Udrzal, and the Minister for Public Works, Srba, each

The second machine shown was a small single-seater fighter, the A.18, also designed by Husnik. Although fitted with an engine of relatively low power, a 185 h.p. B.M.W. IIIa, the performance of the A.18 is very good, especially the climb. At the recent competitions for the Prize of the President of the Czechoslovakian Republic the A.18 won first prize, with an average speed over a 200 km. course (124 miles) of 230 km. (143 m.p.h.). The climb is very good indeed for the power, the average climb being as follows: 1,000 m. (3,280 ft.) in 1 min.; 3,000 m. (10,000 ft.) in 4 mins. 40 secs.; 6,000 m. (20,000 ft.) in 13 mins. 20 secs.; and 8,000 m. (26,000 ft.) in 31 mins. The ceiling is 8,500 m. (28,000 ft.). A short time ago a specially tuned A.18 climbed to 5,000 m. (16,500 ft.) in 8 mins. 30 secs.

The A.18 is a normal single-bay biplane, with the bottom plane of smaller area than the top. The fuselage is of welded steel tube construction with fabric covering. The engine, as will be seen from the accompanying photographs, is neatly cowled-in, and radiators of special design are fitted. A gravity petrol tank is mounted in the top centre-section, the petrol being pumped into it from the main tank by a pump driven by the engine.

The main dimensions, weights, etc., of the A.18 are:



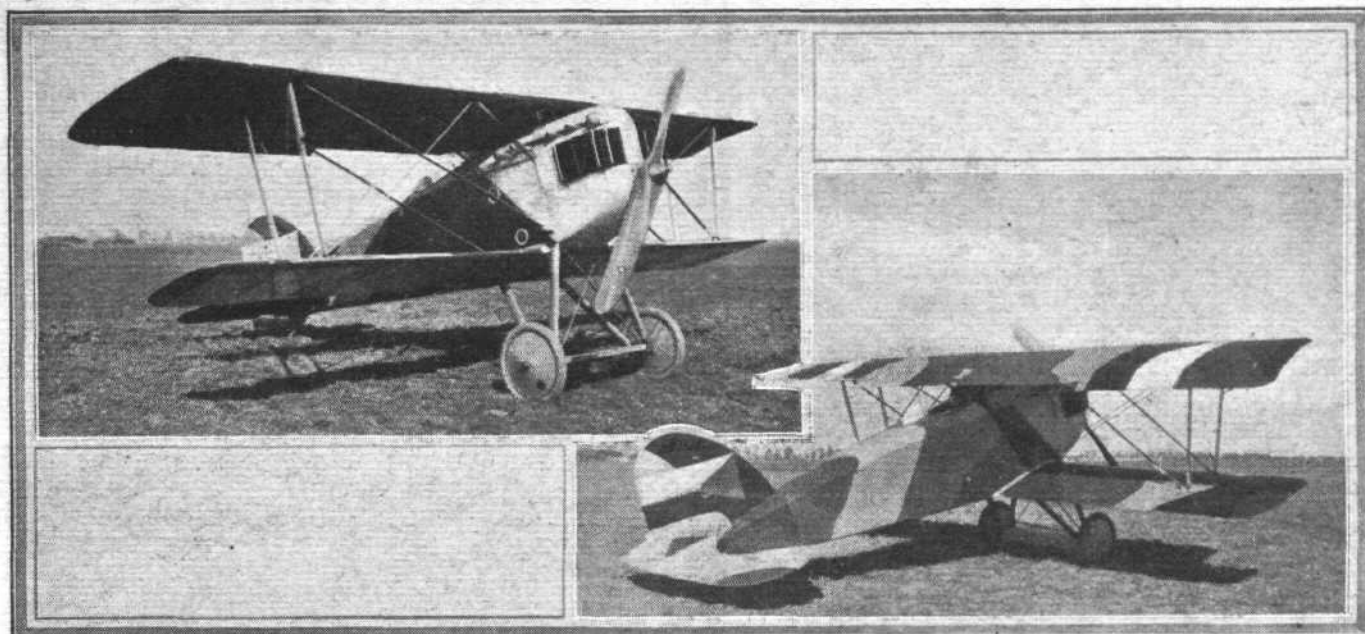
Three-quarter front view of the Aero type A.10 commercial aeroplane.

has one of the A.10 aeroplanes at his disposal, and that both do most of their travelling by air.

The main characteristics of the type A.10 are as follows: Length, o.a., 10.2 m. (33 ft. 6 ins.); span, 14.2 m. (46 ft. 7 ins.); wing area, 51 sq. m. (550 sq. ft.); weight empty, 1,455 kgs. (3,200 lbs.); useful load, 750 kgs. (1,650 lbs.); maximum speed, 140 km. (87 m.p.h.); climb to 10,000 ft. in 30 mins.; ceiling, 5,800 m. (19,000 ft.).

Length, o.a., 6.4 m. (21 ft.); span, 7.6 m. (24 ft. 11 ins.); wing area, 15.8 sq. m. (170 sq. ft.); weight empty, 631 kgs. (1,390 lbs.); useful load, 250 kgs. (550 lbs.); total loaded weight, 881 kgs. (1,940 lbs.); wing loading, 11.4 lbs./sq. ft. (55.8 kgs./sq. m.); maximum speed, 240 km. (150 m.p.h.).

The Military Aircraft Works, Prague.—After a few days at I.L.U.G., the Aero A.10 was removed from the Czechoslovak stand, in order, it was gathered, to be flown back to Prague,



TWO VIEWS OF THE AERO A.18 WITH 185 H.P. B.M.W. IIIa ENGINE : In spite of its low power this machine has a very good performance.

where it was wanted for regular work on the air routes. Its place was taken by a Czech military type, designed by Smolik and built at the Military Aircraft Works at Prague. This machine, the Smolik type 6, was flown over to Gothenburg by Staff Captain Augustin Charvat in 7 hours flying time. The S.6 is a two-seater fighter, with 260 h.p. Maybach engine. The engine is entirely covered in, the cowl even passing over the top of the cylinders. Lamblin radiators are fitted between the undercarriage struts.

The fuselage is of welded steel tube construction and covered with fabric, except for the front portion, which is covered with aluminium. The machine is chiefly of interest on account of its wing structure, which is of the semi-cantilever type, the single pair of interplane struts being placed roughly halfway along the span, leaving very long overhangs. The lower plane is of considerably smaller chord than the top, and both are of thick, high-lift section of the Joukovsky type. A side view of this machine was published in our issue of August 2, 1923.

The main dimensions, etc., of the Smolik 6 are: Length, o.a., 8.6 m. (28 ft. 3 ins.); span, 13 m. (42 ft. 9 ins.); weight empty, 1,100 kgs. (2,420 lbs.); useful load, 700 kgs.

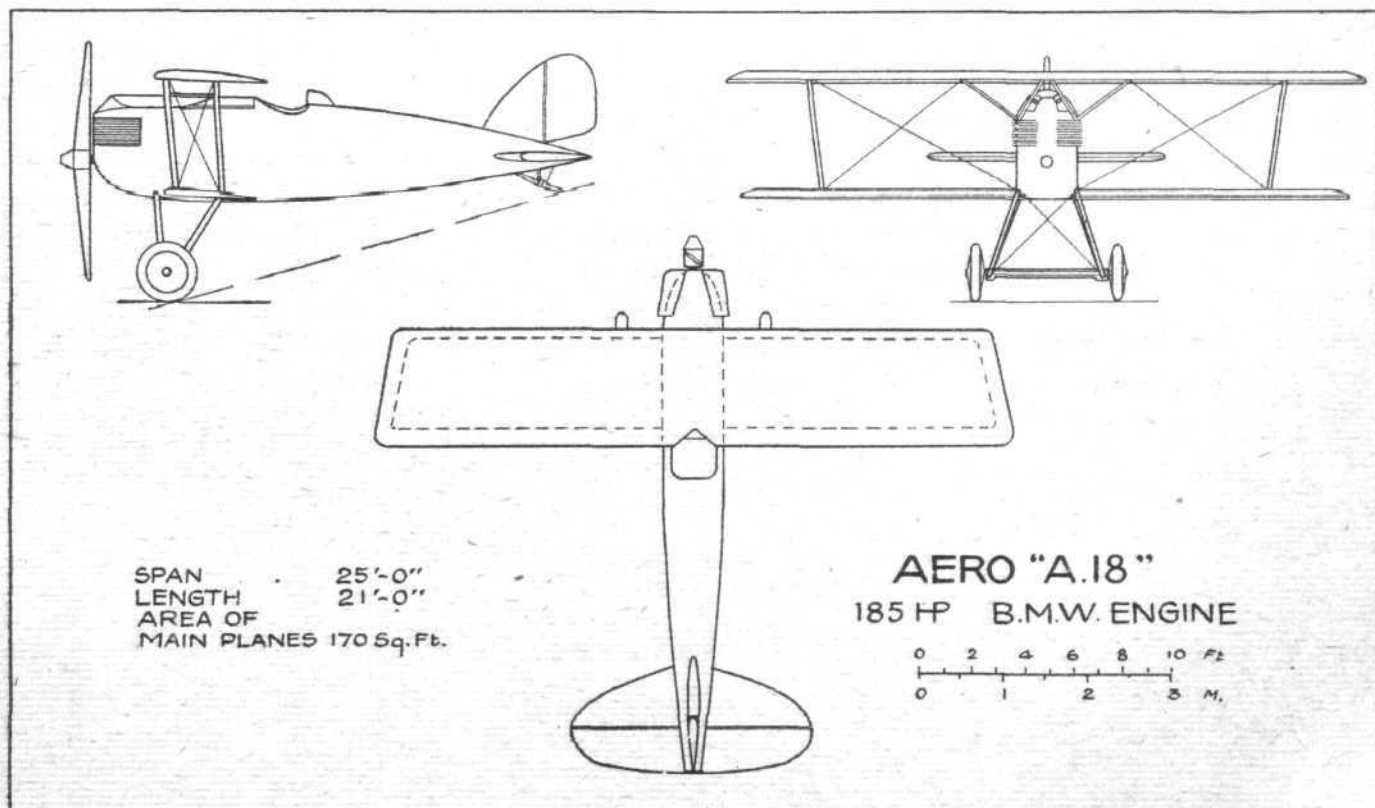
(1,540 lbs.); total loaded weight, 1,800 kgs. (3,960 lbs.); speed, 175 km. (108 m.p.h.); range, 1,200 km. (745 miles); ceiling, 6,500 m. (21,000 ft.).

The Italian Section

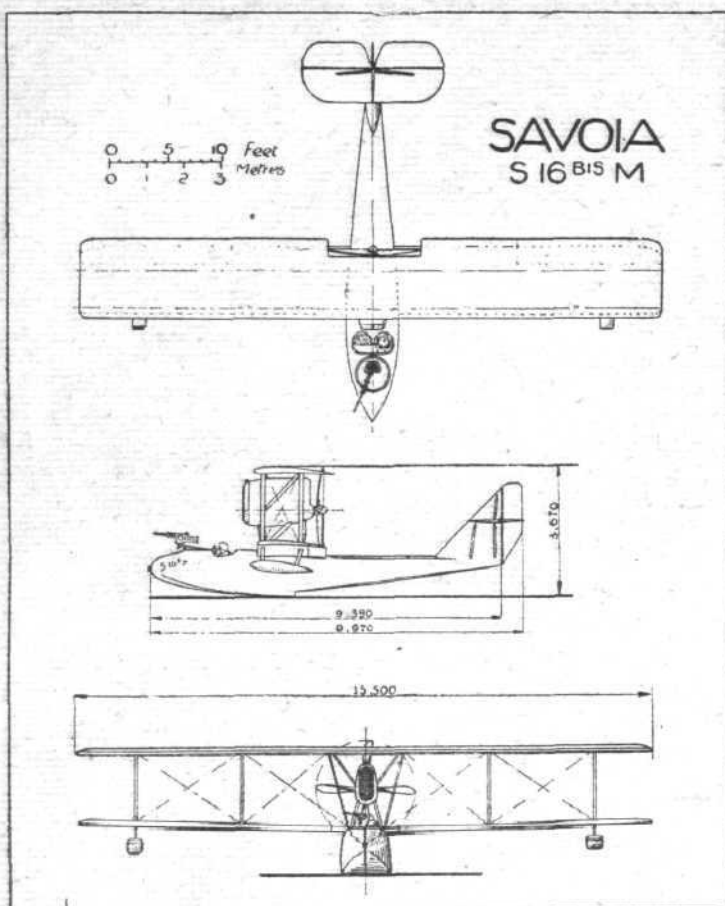
OWING to the non-appearance of the Gabardini machines, the sole Italian representative at I.L.U.G. was the Savoia S.16 bis M.

Societa Idrovolanti Alta Italia, Sesto Calende.—The S.16 bis M flying boat exhibited by the "Savoia" firm is a development of the old S.16 exhibited at the Paris Show of 1919, and is thus not a new type except for certain alterations made to the original design. The machine is intended for bombing and reconnaissance, and as exhibited at Gothenburg had two large bombs slung under the lower planes. A machine gunner is installed in the front cockpit, the pilot and third member of the crew occupying a larger cockpit just ahead of the wings.

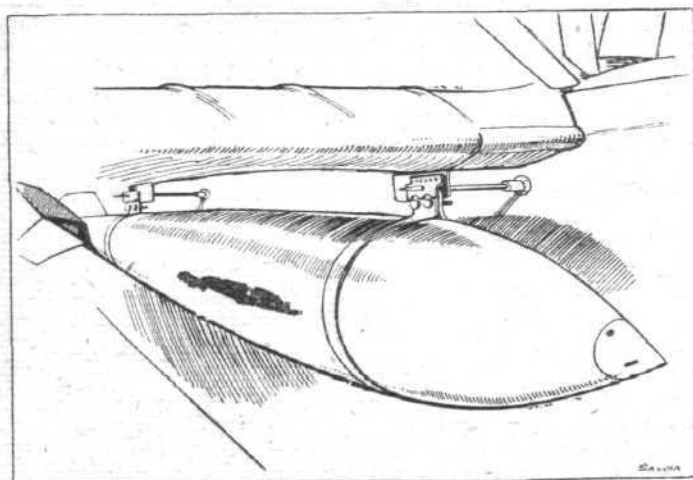
The machine is of standard Savoia design and construction, and there is consequently little need of a detailed reference to its aerodynamic and structural features. The engine is a Fiat A.12 bis of 300 h.p., mounted high in the gap between the wings, and driving a pusher airscrew.



THE AERO TYPE A.18 : General arrangement drawings to scale.



THE SAVOIA S.16 BIS M: General arrangement drawings to scale.

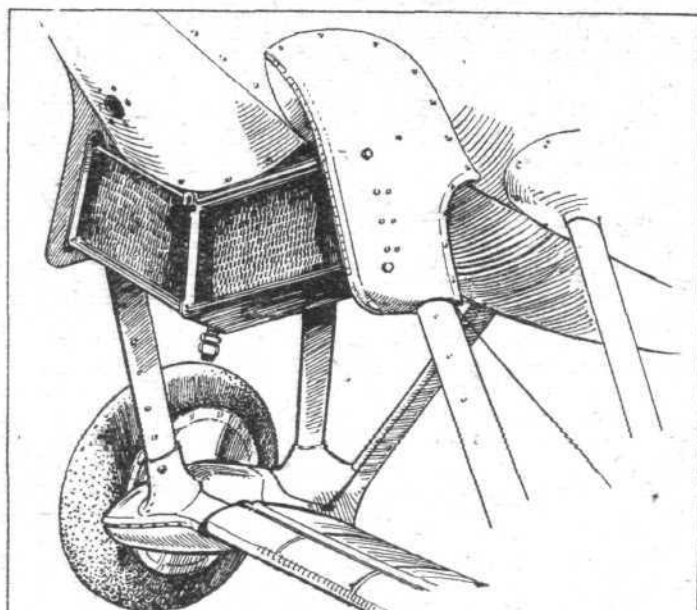


ON THE SAVOIA: Sketch showing the suspension of one of the large bombs under the root of the lower plane.

Following are the main dimensions, weights, etc.: Length o.a., 9.97 m. (32 ft. 8 ins.); span, 15.5 m. (50 ft. 10 ins.); wing area, 59.15 sq. m. (636 sq. ft.); weight empty, 1,700 kgs. (3,740 lbs.); useful load, 800 kgs. (1,760 lbs.); total loaded weight, 2,500 kgs. (5,500 lbs.); wing loading, 8.65 lbs./sq. ft.; power loading, 18.3 lbs./h.p.; maximum speed, 175 km. (108 m.p.h.); minimum speed, 80 km. (50 m.p.h.); climb to 3,000 m. (10,000 ft.) in 48 mins.; ceiling, 5,000 m. (16,400 ft.); radius of action, five hours at full speed (540 miles).

The French Section

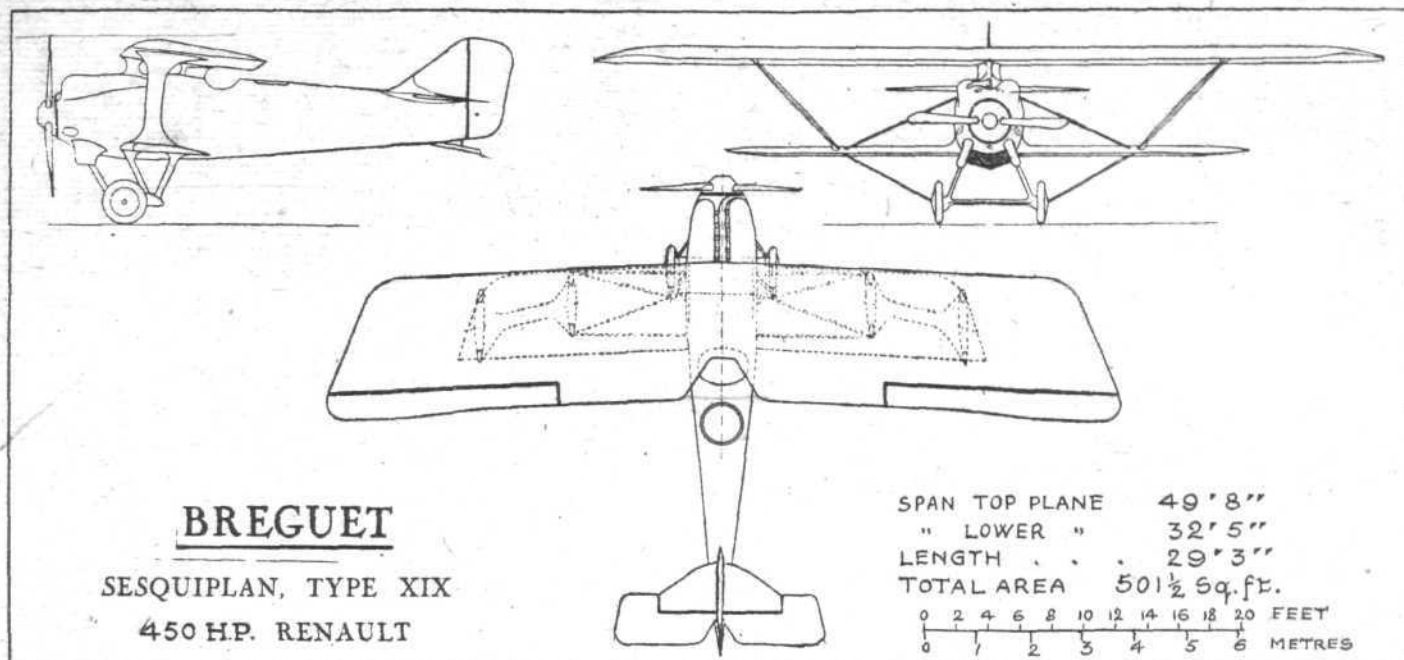
As we mentioned in a previous article on the Gothenburg International Aero Exhibition, France was not very well represented in the matter of actual aeroplanes. Most of the French machines shown were old types which have either been



THE BREGUET SESQUIPLAN: The new type and mounting of radiator, and below the fairing around the terminal of a bracing wire.



THE BREGUET SESQUIPLAN, TYPE XIX: Three-quarter front view.



THE BREGUET SESQUIPLAN, TYPE XIX : General arrangement drawings to scale.

in actual use for a number of years or else have been exhibited at one or more of the Paris Aero Shows. On the other hand, the French exhibits of methods of testing aircraft and engine materials, tableaux showing various manufacturing processes, photographs from France's various commercial air lines, etc., were by far the best in the Show. In the French engine section there were the usual well-known types, but nothing new.

Louis Breguet, Velizy-Villacoublay, exhibited two complete machines. One of these was the old Red Cross ambulance plane, the type 14 T bis, which has made its appearance at several Paris Shows, and which is consequently of but small interest nowadays. The second machine was the Sesquiplan, which has also been exhibited before, although some slight modification appeared to have been made, notably to the radiator and its mounting.

The Breguet Sesquiplan, type XIX, is a two-seater fighter and reconnaissance machine. It is built entirely of metal, chiefly Duralumin, and even the covering is of this material in the form of trough sections about 1 1/4 ins. wide and exceptionally thin. The fuselage is of tubular construction as regards the longerons, whereas the usual struts are supplanted by formers of lattice girder construction, the lattice bars, etc., being stamped from flat sheet. The construction is very pretty, but must be rather costly.

The Breguet XIX can be supplied with either of three power plants—a 450 h.p. Renault type 12 KB; a 370 h.p. Lorraine-Dietrich; or the double Breguet-Bugatti of 450 h.p. As the accompanying photograph shows, the engine is neatly cowled-in, but the flat radiators, projecting down from the bottom of the fuselage and not retractable, rather spoil the streamline shape.

The main data relating to the Breguet Sesquiplan XIX are as follows: Length, o.a., 8.91 m. (29 ft. 3 ins.); span, 14.88 m. (48 ft. 10 ins.); wing area, 46.6 sq. m. (501 sq. ft.); weight empty, 1,350 kgs. (2,970 lbs.); useful load, 750 kgs. (1,650 lbs.); total loaded weight, 2,100 kgs. (4,620 lbs.). With the regulation load of 750 kgs. the Sesquiplan obtained on official tests before the Section Technique the following performances: Speed near ground, 226 km. (140 m.p.h.); at 1,000 m. (3,280 ft.), 228 kms. (141 m.p.h.); at 2,000 m. (6,500 ft.), 231.5 km. (143 m.p.h.); at 3,000 m. (10,000 ft.), 226 km. (140 m.p.h.); at 5,000 m. (16,400 ft.), 208 km. (129 m.p.h.); and at 6,000 m. (20,000 ft.), 196.5 km. (122

m.p.h.); climb to 10,000 ft. in 11 mins. 30 secs.; climb to 20,000 ft. in 39 mins.; ceiling, 7,000 m. (23,000 ft.).

Aéroplanes Caudron, Issy-les-Moulineaux.—The machines shown by Caudron were disappointing inasmuch as they were all of old type and have been exhibited before. The C.27 school machine two-seater has a Le Rhone engine of 80 h.p., while the C.60 is a slightly smaller machine, but with a 130 h.p. Clerget engine. The third machine exhibited, the C.68 with 45 h.p. Anzani engine, was shown at Paris last year. It has folding wings, and is a very nice, handy little machine, although its engine is too large for it to be classed as a light plane. It was a machine of this type which one of the Caudron pilots landed in front of the Grand Palais last autumn.

H. et M. Farman, Billancourt (Seine).—Apart from two "Hydroglisseurs" the Farman exhibit consisted of one F.70 passenger machine. Why this type was chosen to represent the famous constructors is not at all clear. The machine is an old type, without features of special interest, unless one includes in that category the fact that the fuselage bracing wires cross one another right in the doorway, and that, consequently, the passengers will either have to wriggle into the cabin between the wires and the door frame, or else wait until the wire strainers have been undone.

Etablissements Liore et Olivier, Levallois-Perret, showed their twin-engined flying boat, type LeO.13, which was exhibited at the last Paris Aero Show. Although thus this machine cannot lay claim to any novelty interest, it may justly be considered a thoroughly tried old friend, having been in constant use on the route Antibes-Ajaccio, as well as on the Barcelona-Palma-Algiers line. The machine has two Hispano-Suiza engines of 150 h.p. each, and carries six passengers in an enclosed cabin. The hull is of the flat-sided type, with a single step of small depth. The wing section used is one of the Göttingen series, and is fairly thick, giving good spar depth.

The main characteristics of the LeO.13 are: Length, o.a., 11.5 m. (35 ft.); span, 16 m. (52 ft. 6 ins.); wing area, 58 sq. m. (625 sq. ft.); weight empty, 1,600 kgs. (3,500 lbs.); weight of fuel for 3 1/2 hours' flight, 300 kgs. (660 lbs.); useful load, 600 kgs. (1,320 lbs.); total loaded weight, 2,500 kgs. (5,480 lbs.); wing loading, 8.8 lbs./sq. ft.; power loading, 18.25 lbs./h.p.; speed, about 160 km. (100 m.p.h.).

10,800 m., but this figure has not yet been checked by the *Laboratoire des Arts-et-Metiers*.

The Z.R.1 Launched

On August 20 the large American rigid airship Z.R.1, a sister ship to the ill-fated Z.R.2 (R.38), was launched at Lakewood, N.J. The Z.R.1 is 680 ft. long, and has a beam of 78 ft. The "launch" consisted in partly filling the airship with somewhat over 2,000,000 cubic ft. of helium until she became buoyant, and then guiding her along the shed, mooring her inside while all the supports were removed. A similar ship is now nearing completion in Germany.

America Still Retains the Altitude Record

ALTHOUGH at one time it was thought that Sadi Lecointe had succeeded in bringing back to France the world's altitude record, it now appears that on his best performance Sadi only equalled the record established by Macready. On August 1 Sadi made a first attempt, his two barographs registering 10,800 m. and 11,000 m. respectively. On being corrected these figures became 10,127 m. On a second attempt, on August 8, Lecointe's altitude as officially corrected and passed was 10,518 m., or exactly the same as the record figure. On a third attempt, on August 14, Sadi's barograph read

THE ROYAL AIR FORCE

London Gazette, August 10, 1923

General Duties Branch

Sqdn. Leader H. B. Bonning (Payr. Lieut.-Cdr., R.N., retd.) relinquishes his temporary commission on ceasing to be employed, and is granted rank of Lieut.-Col.; Aug. 1. Flying Offr. P. N. Hart (Lieut., Black Watch) relinquishes his temp. commn. on return to Army duty; Aug. 8. Air Commodore F. C. Halahan, C.M.G., C.B.E., D.S.O., M.V.O., is placed on h.p. scale A; July 7 (substituted for *Gazette*, July 24, 1923). Flight Lieut. A. W. Symington, M.C., remains on h.p. scale A, for a further period; July 1.

Memorandum

The permission granted to I. N. Rees to retain the rank of Sec. Lieut. is withdrawn on his enlistment; July 24.

London Gazette, August 14, 1923

General Duties Branch

The following are granted short service commissions as Flying Officers with effect from, and with seniority of, the dates indicated:—J. R. Brown; Aug. 4. A. E. Connolly; Aug. 3.

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the R.A.F. are notified:—

Stores and Accountants Branch

Wing Commander T. O. Lyons (Stores), O.B.E., to No. 4 Stores Depot, Ruislip. 16.8.23.

Flight Lieutenants: R. V. J. S. Hogan (Stores), posting to School of Technical Training (Men), Manston, as previously notified, is cancelled. R. V. J. S. Hogan (Stores) to School of Technical Training (Men), Manston. 1.8.23. D. Barron (Stores) to R.A.F., Central Hospital, Finchley. 15.8.23. C. W. Rogers (Accountant), to No. 5 Flying Training School, Shotwick. 1.9.23.

American Machines for the Schneider Race

ACCORDING to a Reuter message from New York, the three American pilots who will compete in the race for the Schneider Cup at Cowes on September 28 are coming over with their four seaplanes in the *Leviathan*. The pilots are Lieut. Rutledge Irvine, U.S.N., Lieut. A. W. Gorton, U.S.N., and Lieut. D. Rittenhouse, U.S.N. The "expedition" is in charge of Lieut. F. W. Wead, U.S.N. The four machines are: one N.W.2, two C.R.3's, and one T.R.3.

The type C.R.3 is a modification of the Curtiss-Navy Racer, the first of which, it may be remembered, won the 1921 Pulitzer Race. The N.W. (Navy-Wright) type is a small biplane fitted with a 700 h.p. Wright T.2 engine. The T.R.3 is a twin-float seaplane, with 300 h.p. Wright E.4 engine. A somewhat similar type, the T.R.1, won the Curtiss Marine Trophy at Detroit last year with a speed of about 112.5 m.p.h. The new machine is, however, expected to do very much better than that, the engine having been boosted up to a higher power and the machine itself "cleaned up."

Aerial Science in Australia

AT the opening of an aerodynamic laboratory—the only one of its kind in the Southern Hemisphere—in the Engineering School of Melbourne University, the Minister of Defence of the Commonwealth of Australia, Mr. E. K. Bowden, said that it would fill a need which had been felt in Australia for some time. One of its purposes was to carry on experimental work on aeroplanes, machines, engines and materials for construction. In such a new branch of science research was of immense importance, particularly where there were, as in Australia, conditions not present elsewhere, making it all the more necessary to use local resources, and, he hoped, local material, in meeting Australian climatic and other conditions. The laboratory would also be used to instruct engineering students, and to test models and parts with a view to the prediction and improvement of machine designs. In the great wind tunnel accurate models were tested. The engines which had been bought for the plant—Rolls-Royce, Liberty, Hispano-Suiza, Beardmore and Siddeley-Puma—were worth, at their actual trade cost, not less than £10,000. The Aircraft Disposal Co. had delivered them all f.o.b. in London for £150. That had been done because it was for educational purposes. The building and plant had thus cost only £4,800, of which the Defence Department had paid £1,500, but the actual value was £25,000. The University carried out all tests for the department free of charge.

An Experienced Organiser

ANY firm or organisation requiring the services of a practical man, with the widest aviation and commercial experience, at home and abroad (including pilotage of 40 types), should communicate with Box No. 4991, an advertiser whose announcement appears in our current issue. We have personal knowledge of his unique fitness for a really responsible position.

Flying Officer A. C. Clinton is transferred to Reserve, Class A; Aug. 14. Flight Lieut. D. Cloete, M.C., A.F.C., ceases to be seconded to the Union Government of South Africa; July 2. Flying Officer W. B. Clarke, M.C. (Lieut., R.G.A.), relinquishes his temporary commission on return to Army duty; Aug. 3 (substituted for *Gazette*, Aug. 7). Flying Officer J. E. Clarke is placed on retired list on account of ill-health; Aug. 15.

Medical Branch

Flight Lieut. W. G. L. Wambeck is granted a permanent commission; Aug. 15. J. J. Walsh is granted short service commission as Flight Lieut. with effect from, and with seniority of, July 27. G. M. Mellor is granted a temporary commission as a Flight Lieut., with effect from, and with seniority of, Aug. 1.

Reserve of Air Force Officers

The following are granted commissions on probation in ranks stated in the General Duties Branch (Aug. 14):—

Class A.—Flying Officer.—S. Jones, D.F.C.

Pilot Officers.—A. J. Black, I. J. Sankey, I. R. Taylor.

Class A.A.—Pilot Officer.—E. F. Smith.

Flying Officers: L. J. V. Bates (Stores) to Headquarters, Inland Area. 15.8.23. C. L. P. Mullany (Accountant) to No. 24 Squadron, Kenley. 15.8.23.

Medical Branch

Flight Lieutenants (Medical): J. J. Walsh to Research Laboratory and Medical Officers' School of Instruction, Hampstead. 27.7.23, on appointment to a Short Service Commission for short course of instruction. A. C. Ransford to Baghdad Combined Hospital. 25.6.23. G. M. Mellor to Inspector of Recruiting, London, on appointment to temporary commission. 1.8.23.

PUBLICATIONS RECEIVED

Aluminium Facts and Figures. (Vest Pocket Edition. The British Aluminium Company, Ltd., 109, Queen Victoria Street, London; E.C. Price 2s. 6d.

Aeronautical Research Committee. Reports and Memoranda. No. 811 (Ac. 62).—Experiments on Rigid Airship R. 32. Part I.—Pressures on the Upper Fin and Rudder. By J. R. Pannell, R. A. Frazer and H. Bateman. February, 1921. London: H.M. Stationery Office, Kingsway, W.C. Price 1s. 9d. net; by post 1s. 10d.

AERONAUTICAL PATENT SPECIFICATIONS

Abbreviations: cyl. = cylinder; I.C. = internal combustion; m. = motor. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.

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